

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO COMMERCIAL

Report Number: P775697

Luminaire Tested: HCDJBL510CSD-HCD4TSQH-1000lm-3500K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P775697
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2310613A001)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD4TSQH-1000lm-3500K
Description: 4 INCH SQUARE MEDIUM HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

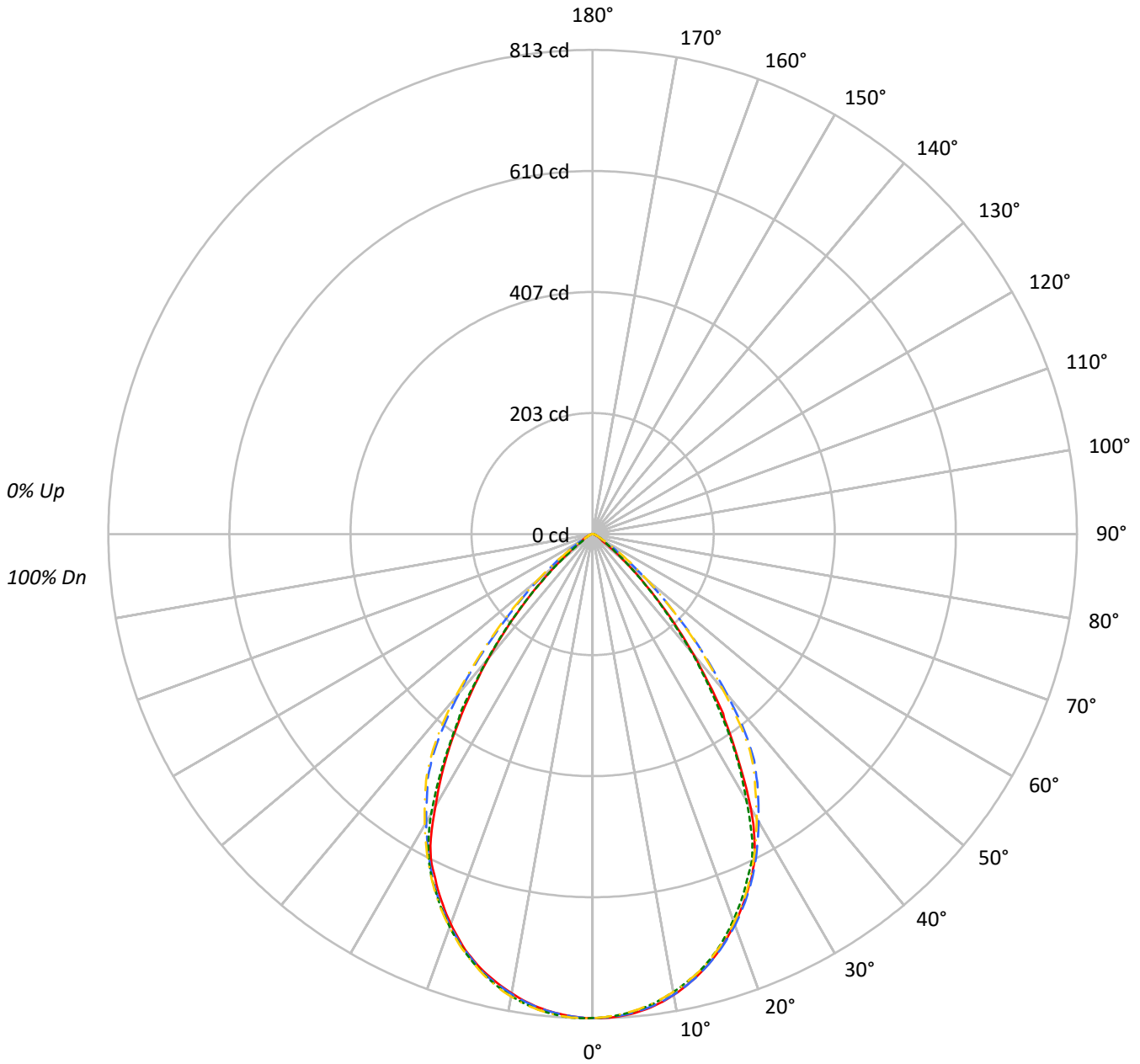
Lumens per Lamp: N/A
Luminaire Lumens: 1040.4 lumens
Efficiency: N/A
Efficacy: 104.0 lumens/watt
Spacing Criteria (0/90/45): 1.05 / 1.05 / 1.09
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 10
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	113	110	107	104	110	107	105	103	103	101	100	100	98	97	96	95	94	92					92			
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	88	85	84					84			
3	100	93	87	82	98	91	86	82	88	84	80	86	82	79	84	81	78	76					76			
4	94	85	79	74	92	84	78	74	82	77	73	80	76	72	78	74	71	70					70			
5	88	79	72	67	87	78	72	67	76	71	66	74	70	66	73	69	65	64					64			
6	83	73	66	61	82	72	66	61	71	65	61	69	64	60	68	63	60	58					58			
7	78	68	61	56	77	67	61	56	66	60	56	65	59	56	63	59	55	54					54			
8	74	63	56	52	73	63	56	52	61	56	51	60	55	51	59	55	51	49					49			
9	70	59	52	48	69	58	52	48	57	52	48	57	51	47	56	51	47	46					46			
10	66	55	49	44	65	55	49	44	54	48	44	53	48	44	52	47	44	43					43			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	80329	80329	80329	80329
5°	80110	79763	79862	80179
10°	78838	78357	78577	79059
15°	76603	76194	76593	76941
20°	73293	72610	73251	73819
25°	69101	67955	68675	69690
30°	60536	58961	60285	61872
35°	47505	46492	48422	49074
40°	33793	33070	35096	35444
45°	20660	20143	21904	22030
50°	10149	10456	11287	10918
55°	3808	5239	5532	4239
60°	2768	3499	3539	2807
65°	2175	2760	2807	2245
70°	1734	2225	2254	1821
75°	1337	1757	1757	1489
80°	911	1366	1309	1195
85°	340	1021	567	794

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 315°
 Vertical Angle: 45°
 Luminance: 31689 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	76.2	7.3
10°-20°	210.2	20.2
20°-30°	289.2	27.8
30°-40°	265.7	25.5
40°-50°	143.7	13.8
50°-60°	38.7	3.7
60°-70°	11.0	1.1
70°-80°	4.6	0.4
80°-90°	0.9	0.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	575.7	55.3
0°-40°	841.4	80.9
0°-60°	1023.8	98.4
0°-90°	1040.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1040.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	813	813	813	813	813	
5°	807	804	805	808	807	76
15°	749	745	748	752	749	210
25°	634	623	630	639	634	288
35°	394	385	401	407	394	245
45°	148	144	157	158	148	117
55°	22	30	32	25	22	26
65°	9	12	12	10	9	9
75°	4	5	5	4	4	4
85°	0	1	0	1	0	1
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7
0.5°	813.1	812.8	812.5	812.2	812.7	812.2	812.4	812.5	812.8	812.8	812.4
1°	813.1	812.6	812.2	812.0	812.3	811.8	811.9	812.0	812.4	812.6	812.2
1.5°	812.8	812.2	812.1	811.5	811.6	810.9	811.3	811.4	812.0	812.1	811.7
2°	812.6	811.9	811.5	810.9	810.7	810.3	810.4	810.6	811.1	811.6	811.1
2.5°	812.1	811.4	810.9	810.2	809.9	809.4	809.6	809.7	810.5	810.8	810.5
3°	811.5	810.4	810.2	809.5	809.1	808.4	808.6	808.8	809.7	810.2	809.7
3.5°	810.6	809.6	809.3	808.6	808.0	807.2	807.3	807.6	808.7	809.3	808.9
4°	809.7	808.6	808.6	807.5	806.8	806.1	806.1	806.5	807.4	808.4	807.8
4.5°	808.7	807.3	807.2	806.4	805.3	804.5	804.7	805.1	806.3	807.3	806.6
5°	807.4	806.0	806.0	804.9	803.9	803.1	803.2	803.7	804.9	805.9	805.2
5.5°	805.9	804.5	804.6	803.5	802.2	801.3	801.5	802.0	803.4	804.6	803.8
6°	804.4	802.8	803.0	801.8	800.5	799.4	799.8	800.4	801.6	803.0	802.1
6.5°	802.7	801.0	801.3	800.2	798.5	797.5	797.8	798.4	799.9	801.4	800.5
7°	800.7	798.9	799.3	798.1	796.4	795.3	795.8	796.5	797.9	799.5	798.6
7.5°	798.6	796.9	797.4	796.2	794.2	793.1	793.5	794.4	795.7	797.6	796.5
8°	796.4	794.6	795.4	793.7	791.8	790.5	791.2	791.9	793.5	795.4	794.4
8.5°	794.0	792.2	793.0	791.3	789.1	788.2	788.8	789.5	791.1	793.0	792.1
9°	791.4	789.7	790.5	788.8	786.5	785.4	786.1	786.9	788.5	790.5	789.7
9.5°	788.6	786.7	788.1	786.2	783.6	782.6	783.3	784.1	785.7	788.1	787.0
10°	785.5	783.8	785.2	783.2	780.7	779.7	780.5	781.3	782.9	785.4	784.3
10.5°	782.5	780.6	782.3	780.2	777.7	776.7	777.6	778.3	779.9	782.6	781.3
11°	779.2	777.4	779.5	777.1	774.6	773.6	774.5	775.2	776.9	779.6	778.3
11.5°	775.9	774.1	775.9	773.9	771.2	770.1	771.1	772.3	773.9	776.5	775.1
12°	772.3	770.4	772.6	770.3	767.8	766.8	767.8	768.9	770.4	773.5	772.9
12.5°	768.8	766.7	768.9	766.8	764.3	763.4	764.3	765.6	767.0	769.9	769.4
13°	765.1	763.0	765.4	763.1	761.0	760.0	760.9	762.2	763.6	766.5	765.9
13.5°	761.2	759.0	761.5	759.3	757.5	756.6	757.5	758.8	760.2	763.1	762.4
14°	757.2	755.0	757.4	755.3	753.4	752.3	753.6	754.7	756.8	759.7	759.0
14.5°	752.8	750.6	753.2	751.3	749.0	748.1	749.3	750.5	752.7	756.3	754.1
15°	748.6	746.2	749.0	747.1	744.6	743.8	744.9	746.3	748.5	752.1	749.8
15.5°	744.0	741.8	744.7	742.6	740.0	739.2	740.3	741.8	744.0	747.9	745.4
16°	739.5	737.1	739.9	737.9	735.3	734.6	735.6	737.3	739.5	743.4	740.9
16.5°	734.5	732.5	735.1	733.3	730.4	729.6	731.0	732.5	734.9	738.8	736.3
17°	729.6	727.4	730.5	728.5	725.3	724.8	726.1	727.8	730.2	734.1	731.4
17.5°	724.6	722.4	725.4	723.4	720.0	719.7	721.0	722.6	724.9	729.3	726.4
18°	719.3	717.1	720.4	718.1	714.2	714.3	716.0	717.5	719.4	724.4	721.5
18.5°	713.6	711.6	715.0	713.0	708.4	708.7	710.6	712.1	713.9	719.1	716.3
19°	708.2	706.0	709.9	707.5	702.4	702.9	705.2	706.5	708.2	713.6	710.9
19.5°	702.5	700.4	704.4	701.6	696.5	697.0	699.7	700.8	702.4	707.9	705.4
20°	696.8	694.6	698.9	695.6	690.3	690.8	694.1	694.9	696.4	702.1	699.9
20.5°	690.8	688.7	693.2	689.5	684.1	684.6	688.2	688.8	690.3	696.2	694.0
21°	684.7	682.5	687.1	683.1	677.6	678.3	682.3	682.6	684.1	690.0	688.2



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CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	666.0	663.6	668.7	663.5	658.2	658.7	663.8	663.1	664.7	670.8	670.0
23°	659.1	657.0	662.3	656.5	651.2	651.9	657.5	656.2	658.2	664.2	663.6
23.5°	652.7	650.5	655.6	650.0	644.0	645.2	650.7	649.5	651.2	657.5	656.8
24°	646.1	643.6	649.1	643.0	636.5	638.2	643.9	642.6	644.2	650.7	650.0
24.5°	640.1	636.7	642.1	636.1	629.6	630.9	636.6	635.7	636.8	643.8	643.0
25°	633.6	629.5	635.0	628.6	623.1	623.5	629.5	628.6	629.7	636.6	635.9
25.5°	625.2	622.8	627.6	621.1	616.5	615.9	622.0	621.2	623.0	629.2	628.7
26°	617.7	616.2	620.0	613.3	610.0	608.6	614.6	613.7	616.6	621.7	621.4
26.5°	609.5	609.8	612.6	606.0	600.5	601.6	606.8	606.1	608.9	614.2	613.7
27°	599.8	601.3	604.9	598.8	590.4	595.0	599.0	598.7	598.7	607.2	606.1
27.5°	589.6	593.1	597.2	592.2	581.0	588.2	591.2	591.6	589.8	600.7	598.3
28°	578.9	584.4	589.1	585.5	568.1	580.3	583.2	584.9	578.8	593.6	590.4
28.5°	567.8	575.3	581.3	578.0	554.9	569.6	575.2	577.1	566.3	583.4	582.7
29°	556.2	565.4	573.1	567.8	542.3	560.8	567.2	567.1	553.7	574.2	574.6
29.5°	543.4	555.0	565.4	558.2	529.3	549.9	558.9	558.0	540.7	564.9	566.7
30°	530.4	543.7	557.4	548.1	516.6	537.1	550.8	547.8	528.2	552.8	558.6
30.5°	516.6	532.9	549.2	535.7	504.2	524.3	542.4	535.4	515.4	540.0	550.6
31°	502.7	520.3	540.9	522.7	491.8	511.8	533.9	523.3	503.2	527.6	542.3
31.5°	488.6	508.1	532.7	510.1	479.4	499.1	525.3	510.6	491.1	514.8	533.8
32°	474.2	494.5	524.3	497.5	467.3	486.8	517.0	498.2	478.9	502.5	525.6
32.5°	460.4	481.6	516.5	484.9	454.5	474.8	508.5	485.7	466.5	490.2	517.2
33°	446.8	467.8	508.9	472.7	441.5	463.0	500.5	473.9	454.1	478.1	509.4
33.5°	433.3	453.8	500.9	460.6	427.5	450.8	492.8	461.7	441.6	465.9	502.4
34°	420.2	440.4	491.6	448.6	413.9	438.8	485.2	450.1	428.6	453.8	495.3
34.5°	406.9	426.8	483.7	436.3	399.4	426.3	477.2	438.1	414.9	441.7	484.8
35°	393.7	413.2	475.5	424.0	385.3	414.4	468.4	426.6	401.3	429.5	474.2
35.5°	380.7	400.4	466.7	411.4	371.1	401.1	458.7	414.4	387.8	416.9	465.1
36°	372.7	387.7	456.3	398.6	357.7	388.0	448.9	402.5	374.1	404.2	453.8
36.5°	358.2	375.2	444.4	385.5	344.2	374.6	436.3	389.8	360.5	391.3	441.3
37°	343.4	362.7	433.2	372.1	331.2	361.2	423.8	377.2	346.7	378.0	428.5
37.5°	328.6	350.1	421.2	359.2	318.5	347.6	410.3	364.5	333.8	364.6	415.5
38°	313.8	337.5	407.2	346.2	306.0	334.5	395.7	351.6	321.2	351.6	402.4
38.5°	300.6	325.0	392.7	333.4	293.5	321.9	381.2	338.6	308.6	338.3	389.2
39°	287.4	312.4	378.6	320.4	281.5	309.6	366.7	325.8	296.1	325.6	375.7
39.5°	274.6	299.5	364.7	307.5	268.9	298.0	352.9	313.3	283.9	313.1	362.4
40°	261.9	286.9	350.7	295.2	256.3	285.7	339.2	301.3	272.0	300.8	348.9
40.5°	249.8	274.0	336.7	283.3	243.7	274.0	326.0	289.0	259.5	288.5	335.7
41°	237.7	261.8	322.6	271.6	231.6	262.6	313.2	277.4	247.2	276.7	322.0
41.5°	225.7	249.8	308.6	260.0	219.2	251.4	300.6	266.0	234.7	265.2	308.7
42°	214.1	238.2	295.3	248.2	207.4	239.5	288.2	254.6	222.7	253.5	295.2
42.5°	202.5	226.6	282.2	236.8	196.1	227.7	276.3	243.4	211.0	242.0	281.9
43°	191.2	215.4	269.3	225.3	185.0	216.4	264.5	232.0	199.6	230.3	268.4
43.5°	179.6	204.5	256.6	213.9	174.1	205.3	252.7	220.8	188.4	218.8	255.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	147.8	172.6	219.6	180.8	144.1	172.9	217.5	188.1	156.7	185.7	218.1
45.5°	137.8	162.2	207.4	170.6	134.4	163.1	206.2	177.4	146.8	175.2	206.5
46°	128.3	152.2	195.8	160.4	125.0	153.3	194.9	167.4	137.1	165.1	194.9
46.5°	119.0	142.5	184.6	150.9	116.2	143.9	184.1	157.4	127.8	155.4	183.8
47°	110.2	133.2	173.5	141.6	107.8	134.6	173.8	147.9	118.6	145.7	173.3
47.5°	102.0	124.1	162.8	132.4	99.9	125.7	163.7	138.4	110.0	136.2	162.9
48°	94.0	115.4	152.7	123.4	93.3	117.0	154.4	129.4	101.8	127.4	152.9
48.5°	86.6	107.2	142.9	114.8	86.7	108.7	145.1	120.8	94.7	118.6	143.1
49°	79.4	99.3	133.6	106.8	80.1	100.9	136.3	112.2	87.6	110.2	134.2
49.5°	72.5	91.8	124.8	98.9	73.5	94.0	127.9	104.1	80.5	102.1	124.8
50°	66.0	84.5	116.2	91.2	68.0	87.2	119.8	97.1	73.4	95.0	116.1
50.5°	60.0	77.5	107.7	83.9	63.0	80.4	112.2	90.2	67.7	87.7	108.0
51°	54.4	70.9	99.8	77.3	58.6	73.5	104.4	83.2	62.5	80.5	100.5
51.5°	49.2	64.8	92.3	71.0	54.5	67.9	97.7	76.2	57.7	73.3	93.4
52°	44.3	59.0	85.2	65.2	50.5	62.8	91.1	69.3	53.2	67.2	86.5
52.5°	39.9	53.4	78.3	60.1	46.8	58.0	84.5	63.5	49.3	61.7	79.5
53°	35.7	48.3	72.0	55.3	43.3	53.6	77.9	58.2	45.5	56.8	72.6
53.5°	32.3	43.6	66.0	51.1	40.1	49.7	71.3	53.4	41.9	52.2	66.3
54°	28.9	39.3	60.4	47.0	36.8	46.1	65.7	49.1	38.5	48.1	60.7
54.5°	25.5	35.1	55.0	43.3	33.6	42.6	60.4	45.1	35.2	44.1	55.5
55°	22.1	31.3	50.3	40.0	30.4	39.3	55.4	41.4	32.1	40.6	50.5
55.5°	19.8	28.5	45.8	36.7	27.7	36.1	50.7	38.0	29.0	37.3	46.0
56°	19.0	25.8	41.6	34.0	25.2	33.0	46.4	34.7	26.3	34.1	41.7
56.5°	18.2	23.0	37.8	31.2	23.4	30.0	42.4	31.7	24.1	31.1	37.9
57°	17.6	20.3	35.0	28.4	22.4	27.1	38.6	28.8	22.6	28.1	34.3
57.5°	16.9	17.5	32.1	25.6	21.5	24.5	35.2	26.0	21.7	25.3	31.1
58°	16.3	16.9	29.3	23.2	20.7	22.2	32.0	23.3	20.9	22.9	28.2
58.5°	15.6	16.3	26.5	21.1	20.0	20.4	29.2	21.1	20.1	21.0	25.5
59°	15.0	15.6	23.7	19.6	19.2	19.5	26.5	19.5	19.4	19.8	23.2
59.5°	14.5	15.0	21.6	18.7	18.4	18.6	24.2	18.5	18.6	19.1	21.2
60°	14.0	14.5	19.9	17.9	17.7	17.9	22.2	17.8	17.9	18.3	19.5
60.5°	13.4	14.0	18.2	17.3	17.0	17.3	20.3	17.1	17.2	17.6	17.8
61°	12.8	13.4	16.9	16.6	16.4	16.6	18.6	16.4	16.6	16.9	16.6
61.5°	12.4	12.9	15.6	15.9	15.7	15.9	17.2	15.7	15.9	16.3	15.3
62°	11.9	12.4	14.6	15.2	15.1	15.3	15.9	15.1	15.2	15.6	14.3
62.5°	11.4	11.9	13.6	14.7	14.5	14.7	14.9	14.5	14.7	15.0	13.4
63°	11.0	11.5	12.7	14.1	13.9	14.1	13.9	14.0	14.1	14.4	12.6
63.5°	10.6	11.0	12.0	13.5	13.4	13.6	13.0	13.4	13.6	13.9	11.9
64°	10.1	10.6	11.5	12.9	12.8	13.0	12.2	12.8	12.9	13.3	11.4
64.5°	9.7	10.1	11.1	12.4	12.3	12.5	11.6	12.3	12.4	12.7	10.9
65°	9.3	9.8	10.6	11.9	11.8	12.0	11.1	11.8	12.0	12.2	10.5
65.5°	9.0	9.4	10.1	11.5	11.3	11.5	10.7	11.3	11.5	11.7	10.0
66°	8.6	9.0	9.8	11.0	10.8	11.1	10.3	10.9	11.0	11.3	9.6



TEST NUMBER: P775697

CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	7.6	8.0	8.7	9.6	9.5	9.7	9.1	9.5	9.6	9.9	8.5
68°	7.2	7.7	8.3	9.2	9.1	9.3	8.7	9.1	9.2	9.5	8.2
68.5°	6.9	7.2	8.0	8.9	8.7	8.9	8.4	8.7	8.8	9.1	7.9
69°	6.6	6.9	7.7	8.5	8.4	8.6	8.0	8.4	8.5	8.7	7.6
69.5°	6.3	6.6	7.4	8.2	8.0	8.2	7.7	8.0	8.1	8.3	7.2
70°	6.0	6.3	7.0	7.8	7.7	7.9	7.4	7.7	7.8	8.0	6.8
70.5°	5.7	6.1	6.7	7.5	7.2	7.6	6.9	7.2	7.4	7.6	6.6
71°	5.5	5.8	6.4	7.1	6.9	7.1	6.6	6.9	7.0	7.2	6.3
71.5°	5.2	5.5	6.1	6.7	6.6	6.8	6.3	6.6	6.6	6.8	6.0
72°	5.0	5.3	5.8	6.5	6.3	6.5	6.1	6.3	6.3	6.5	5.7
72.5°	4.7	5.0	5.6	6.2	6.0	6.2	5.8	6.0	6.0	6.2	5.5
73°	4.5	4.8	5.3	5.9	5.7	5.9	5.5	5.7	5.7	5.9	5.2
73.5°	4.1	4.5	5.0	5.6	5.4	5.6	5.3	5.4	5.4	5.6	5.0
74°	3.9	4.2	4.8	5.3	5.2	5.4	5.0	5.1	5.2	5.4	4.8
74.5°	3.7	4.0	4.6	5.1	4.9	5.1	4.8	4.9	4.9	5.1	4.5
75°	3.5	3.7	4.2	4.8	4.6	4.9	4.5	4.6	4.6	4.8	4.2
75.5°	3.3	3.5	4.0	4.6	4.3	4.6	4.2	4.3	4.3	4.6	4.0
76°	3.0	3.3	3.8	4.3	4.1	4.3	4.0	4.0	4.0	4.2	3.8
76.5°	2.8	3.1	3.6	4.0	3.8	4.1	3.8	3.8	3.8	4.0	3.5
77°	2.7	2.9	3.4	3.8	3.6	3.8	3.6	3.5	3.5	3.7	3.3
77.5°	2.5	2.7	3.2	3.6	3.4	3.6	3.4	3.3	3.3	3.5	3.1
78°	2.3	2.5	3.0	3.4	3.2	3.4	3.2	3.1	3.1	3.3	2.9
78.5°	2.1	2.3	2.8	3.2	3.0	3.2	3.0	2.9	2.9	3.0	2.8
79°	2.0	2.1	2.6	3.0	2.8	3.0	2.8	2.7	2.7	2.8	2.6
79.5°	1.8	1.9	2.5	2.8	2.6	2.8	2.6	2.5	2.5	2.6	2.4
80°	1.6	1.8	2.3	2.6	2.4	2.6	2.5	2.3	2.3	2.4	2.2
80.5°	1.4	1.6	2.1	2.4	2.3	2.4	2.3	2.1	2.1	2.2	2.1
81°	1.2	1.3	2.0	2.2	2.1	2.2	2.1	1.9	1.9	2.0	1.9
81.5°	1.1	1.2	1.8	2.0	1.9	2.1	2.0	1.7	1.7	1.8	1.8
82°	1.0	1.0	1.7	1.9	1.8	1.9	1.8	1.6	1.6	1.6	1.6
82.5°	0.8	0.9	1.4	1.7	1.6	1.8	1.7	1.3	1.3	1.3	1.4
83°	0.7	0.8	1.3	1.6	1.4	1.6	1.4	1.2	1.1	1.2	1.2
83.5°	0.5	0.6	1.1	1.3	1.3	1.4	1.3	1.0	1.0	1.0	1.1
84°	0.4	0.5	1.0	1.2	1.1	1.2	1.2	0.9	0.8	0.9	1.0
84.5°	0.4	0.4	0.9	1.0	1.0	1.1	1.0	0.8	0.7	0.7	0.9
85°	0.3	0.4	0.8	0.9	0.9	1.0	0.9	0.6	0.5	0.6	0.8
85.5°	0.2	0.3	0.7	0.8	0.7	0.8	0.8	0.5	0.4	0.5	0.6
86°	0.2	0.2	0.5	0.6	0.6	0.7	0.7	0.4	0.4	0.4	0.5
86.5°	0.2	0.2	0.4	0.5	0.5	0.6	0.6	0.4	0.3	0.3	0.4
87°	0.1	0.1	0.3	0.4	0.4	0.4	0.5	0.3	0.3	0.3	0.3
87.5°	0.0	0.1	0.2	0.3	0.3	0.3	0.4	0.2	0.2	0.2	0.2
88°	0.0	0.0	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.1
88.5°	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1



TEST NUMBER: P775697

CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P775697

CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	812.7	812.7	812.7	812.7	812.7	812.7
0.5°	812.5	813.2	812.8	813.0	812.8	813.1
1°	812.4	813.1	812.8	813.0	812.8	813.1
1.5°	812.1	813.1	812.8	812.9	812.8	812.8
2°	811.7	812.8	812.7	812.7	812.6	812.6
2.5°	811.1	812.6	812.3	812.6	812.2	812.1
3°	810.4	812.1	811.8	812.0	811.7	811.5
3.5°	809.6	811.3	811.1	811.4	810.9	810.6
4°	808.6	810.3	810.3	810.5	810.2	809.7
4.5°	807.4	809.3	809.4	809.6	809.2	808.7
5°	806.2	808.1	808.2	808.5	808.0	807.4
5.5°	804.7	806.9	807.0	807.1	806.7	805.9
6°	803.2	805.3	805.6	805.8	805.2	804.4
6.5°	801.4	803.7	804.0	804.1	803.6	802.7
7°	799.5	801.9	802.2	802.4	801.8	800.7
7.5°	797.5	800.1	800.5	800.5	799.9	798.6
8°	795.2	797.8	798.3	798.5	797.7	796.4
8.5°	792.9	795.6	796.1	796.2	795.4	794.0
9°	790.5	793.0	793.9	794.0	792.8	791.4
9.5°	787.8	790.3	791.2	791.4	790.4	788.6
10°	785.0	787.7	788.4	788.8	787.5	785.5
10.5°	782.0	784.8	785.6	785.9	784.6	782.5
11°	779.1	781.6	782.5	782.8	781.5	779.2
11.5°	775.9	778.5	779.2	779.7	778.3	775.9
12°	772.6	775.0	775.9	776.4	774.7	772.3
12.5°	768.9	771.6	772.4	772.7	771.3	768.8
13°	765.3	768.0	768.9	769.3	767.7	765.1
13.5°	761.6	764.2	765.2	765.4	763.7	761.2
14°	757.9	760.4	761.3	761.2	759.8	757.2
14.5°	755.0	756.3	757.3	757.0	755.6	752.8
15°	750.8	751.9	753.2	752.7	751.4	748.6
15.5°	746.3	747.7	748.5	748.4	746.9	744.0
16°	741.8	743.1	744.1	744.0	742.4	739.5
16.5°	737.1	738.4	739.6	739.3	737.8	734.5
17°	732.2	733.5	734.8	734.4	733.1	729.6
17.5°	727.3	728.6	729.8	729.5	728.0	724.6
18°	722.1	723.3	724.8	724.5	722.9	719.3
18.5°	716.8	718.1	719.6	719.1	717.4	713.6
19°	711.5	712.8	714.2	713.9	711.9	708.2
19.5°	705.8	707.4	708.6	708.4	706.4	702.5
20°	700.1	701.8	703.1	702.9	700.7	696.8
20.5°	694.3	695.9	697.3	697.1	694.8	690.8
21°	688.3	690.0	691.2	691.3	688.6	684.7



TEST NUMBER: P775697

CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	669.7	671.3	672.7	673.0	669.9	666.0
23°	663.4	664.9	666.2	666.6	663.4	659.1
23.5°	656.7	658.3	659.6	659.9	656.7	652.7
24°	649.8	651.4	652.9	653.2	650.1	646.1
24.5°	643.1	644.9	646.1	646.3	643.3	640.1
25°	636.2	639.0	638.9	639.3	636.2	633.6
25.5°	629.0	630.9	631.8	632.2	629.0	625.2
26°	621.6	623.2	625.0	624.7	622.1	617.7
26.5°	615.3	615.3	618.7	617.5	615.7	609.5
27°	608.3	606.1	610.2	610.1	609.2	599.8
27.5°	599.5	597.0	602.4	602.5	600.8	589.6
28°	591.7	587.1	594.2	594.6	592.4	578.9
28.5°	583.1	576.8	585.2	587.0	584.2	567.8
29°	574.2	565.6	576.0	579.4	575.0	556.2
29.5°	564.4	554.3	566.1	571.5	565.4	543.4
30°	554.6	542.1	555.9	563.6	555.1	530.4
30.5°	544.0	529.1	545.3	555.6	544.0	516.6
31°	533.2	515.4	533.7	547.6	532.8	502.7
31.5°	521.7	502.3	521.8	539.4	520.7	488.6
32°	510.0	488.2	509.6	531.3	508.5	474.2
32.5°	497.3	473.9	496.6	524.1	495.7	460.4
33°	484.3	460.4	483.0	516.1	482.2	446.8
33.5°	470.9	446.7	469.5	507.6	468.6	433.3
34°	457.7	433.3	455.9	500.0	455.1	420.2
34.5°	443.9	419.7	442.5	491.1	441.5	406.9
35°	430.6	406.7	429.0	481.1	427.9	393.7
35.5°	417.6	393.8	415.6	471.2	415.0	380.7
36°	404.6	380.9	402.9	461.3	402.3	372.7
36.5°	391.6	373.5	390.2	450.2	389.5	358.2
37°	379.1	358.9	377.6	438.7	377.1	343.4
37.5°	366.6	343.8	365.0	426.8	364.6	328.6
38°	354.3	328.8	352.3	414.3	352.1	313.8
38.5°	341.8	313.8	339.7	401.5	339.6	300.6
39°	329.2	300.9	327.1	388.1	327.1	287.4
39.5°	316.7	287.6	314.4	374.8	314.6	274.6
40°	304.1	274.7	301.5	360.6	301.6	261.9
40.5°	291.4	262.1	288.5	346.3	289.0	249.8
41°	278.8	250.1	276.0	332.1	276.6	237.7
41.5°	266.6	237.7	263.6	318.0	264.4	225.7
42°	254.7	226.0	251.7	303.8	252.6	214.1
42.5°	242.9	214.5	239.8	290.1	240.8	202.5
43°	231.4	202.4	228.4	276.7	229.4	191.2
43.5°	220.1	190.8	217.0	263.7	218.0	179.6



TEST NUMBER: P775697

CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	188.0	157.6	183.8	226.7	185.7	147.8
45.5°	177.6	147.3	173.1	215.2	175.2	137.8
46°	167.4	137.2	162.7	203.8	165.1	128.3
46.5°	157.1	127.6	152.1	192.3	154.9	119.0
47°	147.4	118.4	142.4	181.2	145.4	110.2
47.5°	137.8	109.4	132.8	170.4	135.9	102.0
48°	128.6	100.8	123.5	160.1	126.8	94.0
48.5°	119.8	92.8	114.7	149.7	117.8	86.6
49°	111.2	85.1	106.2	139.8	109.6	79.4
49.5°	103.3	78.0	97.8	130.3	101.4	72.5
50°	95.9	71.0	90.1	121.0	93.3	66.0
50.5°	88.6	64.4	82.8	112.3	85.9	60.0
51°	81.2	58.4	75.5	103.9	78.8	54.4
51.5°	73.9	52.9	69.0	95.8	72.1	49.2
52°	67.3	47.8	62.9	88.2	65.8	44.3
52.5°	61.2	43.0	56.9	81.0	59.7	39.9
53°	55.4	38.5	51.5	74.2	53.9	35.7
53.5°	49.9	35.1	46.3	67.8	48.6	32.3
54°	44.7	31.6	41.6	61.4	43.7	28.9
54.5°	40.2	28.1	37.4	55.8	39.3	25.5
55°	35.9	24.6	33.9	50.5	35.6	22.1
55.5°	32.1	21.1	30.4	45.5	32.1	19.8
56°	28.3	19.5	26.9	40.8	28.6	19.0
56.5°	24.9	18.6	23.5	36.5	25.1	18.2
57°	21.9	17.9	20.0	33.5	21.5	17.6
57.5°	19.3	17.2	18.0	30.6	19.0	16.9
58°	17.3	16.6	17.3	27.5	17.3	16.3
58.5°	16.6	15.9	16.7	24.5	16.6	15.6
59°	15.8	15.3	16.1	21.6	15.9	15.0
59.5°	15.3	14.8	15.4	19.7	15.3	14.5
60°	14.7	14.2	14.8	18.0	14.8	14.0
60.5°	14.2	13.7	14.3	16.6	14.2	13.4
61°	13.7	13.2	13.8	15.3	13.7	12.8
61.5°	13.2	12.6	13.3	14.2	13.2	12.4
62°	12.6	12.2	12.7	13.3	12.6	11.9
62.5°	12.1	11.7	12.2	12.4	12.2	11.4
63°	11.7	11.3	11.8	11.7	11.7	11.0
63.5°	11.3	10.9	11.3	11.2	11.2	10.6
64°	10.8	10.5	10.9	10.8	10.8	10.1
64.5°	10.5	10.0	10.5	10.4	10.4	9.7
65°	10.0	9.6	10.0	9.9	9.9	9.3
65.5°	9.6	9.2	9.7	9.5	9.5	9.0
66°	9.2	8.9	9.3	9.2	9.2	8.6



TEST NUMBER: P775697

CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	8.3	7.9	8.3	8.2	8.1	7.6
68°	7.9	7.6	7.9	7.8	7.8	7.2
68.5°	7.6	7.2	7.6	7.5	7.5	6.9
69°	7.2	6.9	7.2	7.1	7.1	6.6
69.5°	6.9	6.6	6.9	6.8	6.8	6.3
70°	6.6	6.3	6.7	6.5	6.5	6.0
70.5°	6.4	6.1	6.4	6.3	6.2	5.7
71°	6.1	5.8	6.1	6.0	5.9	5.5
71.5°	5.8	5.6	5.8	5.7	5.6	5.2
72°	5.6	5.3	5.6	5.5	5.4	5.0
72.5°	5.4	5.1	5.3	5.2	5.1	4.7
73°	5.1	4.8	5.1	5.0	4.8	4.5
73.5°	4.9	4.6	4.9	4.8	4.6	4.1
74°	4.7	4.3	4.6	4.5	4.3	3.9
74.5°	4.5	4.1	4.3	4.2	4.0	3.7
75°	4.1	3.9	4.1	4.0	3.8	3.5
75.5°	3.9	3.7	3.9	3.8	3.6	3.3
76°	3.7	3.5	3.7	3.6	3.4	3.0
76.5°	3.5	3.3	3.5	3.4	3.2	2.8
77°	3.3	3.1	3.3	3.1	3.0	2.7
77.5°	3.1	2.9	3.1	3.0	2.7	2.5
78°	2.9	2.7	2.9	2.8	2.5	2.3
78.5°	2.8	2.6	2.7	2.6	2.4	2.1
79°	2.6	2.4	2.5	2.4	2.2	2.0
79.5°	2.4	2.2	2.4	2.2	2.0	1.8
80°	2.2	2.1	2.2	2.1	1.8	1.6
80.5°	2.1	2.0	2.1	1.9	1.6	1.4
81°	1.9	1.8	1.9	1.8	1.4	1.2
81.5°	1.8	1.7	1.7	1.6	1.2	1.1
82°	1.6	1.4	1.6	1.4	1.0	1.0
82.5°	1.4	1.3	1.4	1.2	0.9	0.8
83°	1.3	1.2	1.2	1.1	0.8	0.7
83.5°	1.1	1.1	1.1	1.0	0.7	0.5
84°	1.0	1.0	1.0	0.9	0.5	0.4
84.5°	0.9	0.9	0.8	0.8	0.4	0.4
85°	0.8	0.7	0.7	0.6	0.4	0.3
85.5°	0.6	0.6	0.6	0.5	0.3	0.2
86°	0.5	0.5	0.5	0.4	0.2	0.2
86.5°	0.4	0.4	0.4	0.3	0.2	0.2
87°	0.3	0.3	0.3	0.2	0.1	0.1
87.5°	0.2	0.2	0.2	0.1	0.1	0.0
88°	0.1	0.1	0.1	0.1	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P775697

CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.0	0.0

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Report Generated By 670245859 / DESKTOP-T8S5UU9

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— 0°-180° - - 45°-225° - - - - 90°-270° - · - 135°-315°

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21.5°	678.6	676.2	681.1	676.6	671.3	671.7	676.3	676.2	677.6	683.7	682.2
22°	672.4	670.0	675.0	670.1	664.9	665.3	670.0	669.7	671.2	677.2	676.3



44°	168.6	193.8	244.1	202.5	163.8	193.9	240.7	209.7	177.2	207.7	242.8
44.5°	158.0	183.1	231.8	191.3	153.7	183.4	229.0	198.7	166.8	196.6	230.2



66.5°	8.3	8.7	9.4	10.6	10.4	10.6	9.8	10.4	10.6	10.8	9.2
67°	7.9	8.3	9.0	10.0	9.9	10.1	9.4	9.9	10.0	10.4	8.9



89°	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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21.5°	682.1	683.8	685.2	685.3	682.5	678.6
22°	676.0	677.6	679.0	679.2	676.3	672.4



44°	209.2	179.7	205.7	251.1	207.1	168.6
44.5°	198.6	168.5	194.7	238.6	196.3	158.0



66.5°	8.9	8.5	8.9	8.8	8.8	8.3
67°	8.6	8.2	8.6	8.5	8.4	7.9



89°	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

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Scaled Data Report



(END OF REPORT)